

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION

International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6:  
H01L 23/02, 21/44, B29C 13/00(11) International Publication Number: WO.99/56316  
(43) International Publication Date: 4 November 1999 (04.11.99)

(21) International Application Number: PCT/US99/09020

(22) International Filing Date: 26 April 1999 (26.04.99)

(30) Priority Data:  
09/057,698 28 April 1998 (28.04.98) US

(71) Applicant: TESSERA, INC. (US/US); 3099 Orchard Drive, San Jose, CA 95134 (US).

(72) Inventor: NGUYEN, Tue; 1769 Laine Avenue, Santa Clara, CA 95051 (US). MITCHELL, Craig S.; 3343 Cypress Drive, Santa Clara, CA 95051 (US). DISTEFANO, Thomas H.; 16129 Greenwood Lane, Monte Sereno, CA 95030 (US).

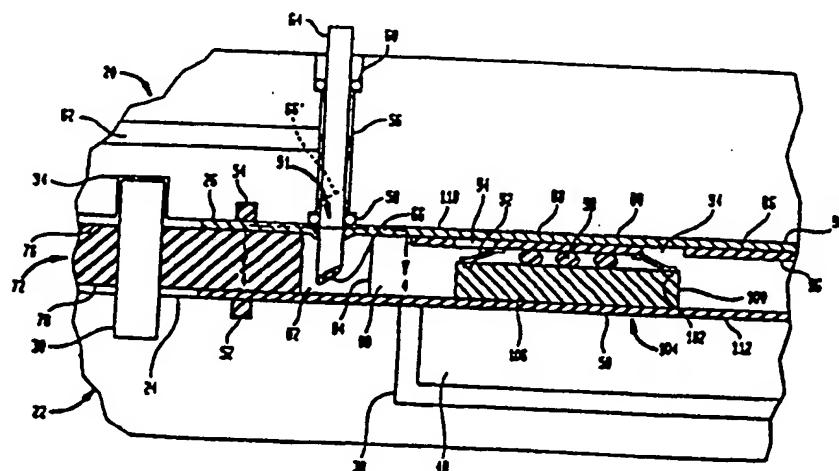
(74) Agent: MILLET, Marcus J. et al.; Lerner, David, Littenberg, Krumholz &amp; Mandl, LLP, 600 South Avenue West, Westfield, NJ 07090 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KO, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SL, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BV, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TO).

Published

With International search report.

(54) Title: ENCAPSULATION OF MICROELECTRONIC ASSEMBLIES



## (57) Abstract

Microelectronic assemblies are encapsulated using disposable frames (72). The microelectronic assemblies (104) are disposed within an aperture (30) defined by a frame. The aperture is covered by top and bottom sealing layers (110, 112) so that the frame and sealing layers define an enclosed space encompassing the assemblies. The encapsulant is injected into this closed space. The frame is then separated from the encapsulation fixture and held in a curing oven. After cure, the frame is cut apart and the individual assemblies are severed from another. Because the frame need not be held in the encapsulation fixture during curing, the process achieves a high throughput.

BEST AVAILABLE COPY